

Using Natural System Functions

The Natural system functions may be specified in a MOVE, COMPUTE, DISPLAY, PRINT or WRITE statement that is used within any of the following statement blocks:

- AT BREAK,
- AT END OF DATA,
- AT END OF PAGE,

that is, for all FIND, READ, HISTOGRAM, SORT or READ WORK FILE processing loops.

If a system function is used within an AT END OF PAGE statement, the corresponding DISPLAY statement must include the GIVE SYSTEM FUNCTIONS clause.

Records rejected by a WHERE clause are not evaluated by a system function.

If system functions are evaluated from database fields which originated from different levels of processing loops initiated with a FIND, READ, HISTOGRAM or SORT statement, the values are always processed according to their position in the loop hierarchy. For example, values for an outer loop will only be processed when new data values have been obtained for that loop.

If system functions are evaluated from user-defined variables, the processing is dependent on the position in the loop hierarchy where the user-defined variable was introduced in reporting mode. If the user-defined variable is defined before any processing loop is initiated, it will be evaluated for system functions in the loop where the AT BREAK, AT END OF DATA or AT END OF PAGE statement is defined. If a user-defined variable is introduced within a processing loop it will be processed the same as a database field from that processing.

For selective referencing of system function evaluation for user-defined variables it is recommended to specify a loop reference with the user-defined variable to indicate in which loop the value is to be processed. The loop reference may be specified as a statement label or source code line number.

System Functions in SORT GIVE FUNCTIONS Statement

System functions may also be referenced when they have been evaluated in a GIVE FUNCTIONS clause of a SORT statement.

For a reference to a system function evaluated with a SORT GIVE FUNCTIONS statement, the name of the system function must be prefixed with an asterisk (*).

Arithmetic Overflows in AVER, NAVER, SUM or TOTAL

Fields to which the system functions AVER, NAVER, SUM and TOTAL are to be applied must be long enough (either by default or user-specified) to hold any overflow digits. If any arithmetic overflow occurs, an error message will be issued.

Normally, the length is the same as that of the field to which the system function is applied; if this is not long enough, use the NL parameter to increase the output length as follows:

SUM(field)(NL=nn)

This will not only increase the output length but also causes the field to be made longer internally.

Statement Referencing (*r*)

Statement referencing is also available for system functions (see also Statement Reference Notation - r in the section User-Defined Variables of the Natural Statements documentation).

By using a statement label or the source-code line number (*r*) you can determine in which processing loop the system function is to be evaluated for the specified field.